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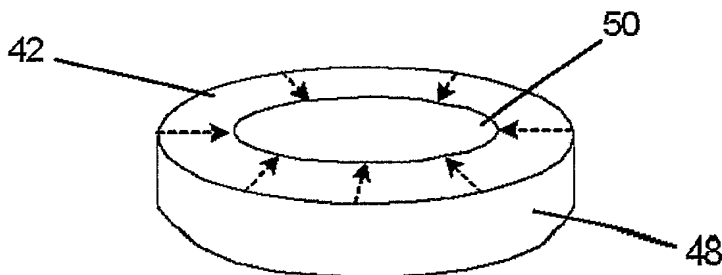
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(54) Title: FREE-STANDING SILICON CARBIDE ARTICLES FORMED BY CHEMICAL VAPOR DEPOSITION AND METHODS FOR THEIR MANUFACTURE



(57) Abstract: Improved methods for manufacturing silicon carbide rings using chemical vapor deposition. Cylindrical tubes are used as deposition substrates and the resulting material deposited on the inside surface of cylindrical tubes or on the outside surface of cylindrical mandrels, or both, is sliced or cut into the desired ring size and shape. The resulting rings have a crystal growth that is oriented substantially planar to the finished article. The invention also relates to nitrogen doped silicon carbide material, as well as to silicon carbide structures having axes of grain growth substantially parallel to the plane of the structure and to each other,

and having rotational orientation that is substantially random with respect to the axes of grain growth of the grains.